

15-07-04 Water Efficient Landscaping

A. **Purpose.** The City Council has found that:

- Water is an increasingly scarce resource;
- Nearly two-thirds of the City's culinary water resources are used for outdoor use, including watering landscapes;
- The City desires to promote the design, installation and maintenance of landscapes that are both attractive and water efficient.

Furthermore, the City Council has determined that it is in the public interest to conserve the public's water resources and to promote water efficient landscaping. The purpose of this ordinance is to protect and enhance the community's environmental, economic, recreational, and aesthetic resources by promoting efficient use of water in the community's landscapes, reduce water waste and establish a structure for designing, installing and maintaining of water efficient landscapes throughout the City.

B. **Definitions Applicable to Water Efficient Landscaping Section.** The following definitions shall apply to this Chapter:

Administrative Standards shall mean the set of rules, procedures and requirements set forth in a landscape ordinance associated with making permit application, assembling materials for public review, meeting the requirements of the landscape ordinance, seeking approvals, enforcement, conducting site inspections and filing reports.

Bubbler shall mean an irrigation head that delivers water to the root zone by "flooding" the planted area, usually measured in gallons per minute. Bubblers exhibit a trickle, umbrella or short stream pattern.

Drip Emitter shall mean a drip irrigation fitting that delivers water slowly at the root zone of the plant, usually measured in gallons per hour.

Evapotranspiration (ET) shall mean the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time, expressed in inches per day, month or year (see also Reference Evapotranspiration Rate).

Extra-Drought Tolerant Plant shall mean a plant that can survive without irrigation throughout the year once established, although supplemental water may be desirable during drought periods for improved appearance and disease resistance.

Ground Cover shall mean material planted in such a way as to form a continuous cover over the ground that can be maintained at a height not more than twelve [12] inches.

Hardscape shall mean patios, decks and paths. **Does not** include driveways, parking lots and sidewalks.

Irrigation Audit shall mean an on-site survey of the irrigation system, conduct a catch-can test to measure system efficiency, and the generation of an irrigation schedule and recommendations to improve irrigation efficiency.

Irrigated Landscaped Area shall mean all portions of a development site to be improved with planting and irrigation. Natural open space areas shall not be included in the Irrigated Landscaped Area.

Irrigation Efficiency shall mean the measurement of the amount of water beneficially applied, divided by the total amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system hardware characteristics and management practices.

Irrigation Contractor shall mean a person who has been certified by The Irrigation Association to install irrigation systems or as otherwise approved by the Department of Public Utilities.

Irrigation Designer shall mean a person who has been certified by The Irrigation Association to prepare irrigation system designs, or a Landscape Architect or as otherwise approved by the Department of Public Utilities.

Irrigation Plan shall mean the plan which shows the components of the irrigation system with water meter size, backflow prevention, rain shut-off device, precipitation rates, flow rate and operating pressure for each irrigation zone, and identification of all irrigation equipment.

Landscape Architect shall mean a person who holds a certificate to practice landscape architecture in the State of Utah.

Landscape Designer shall mean a person who has been certified by the Utah Nursery and Landscape Association to prepare Landscape Plans or as otherwise approved by the Department of Public Utilities.

Landscape Education Package shall mean a package of documents which is intended to inform and educate water users in the City about water efficient landscapes. The package includes the principles of water efficient landscape design, a listing of Water Conserving Plants, a listing of certified Landscape Designers, Landscape Architects, certified Irrigation Designers, certified Irrigation Contractors, an information packet about various area demonstration projects, City's water rates, billing format for water use, and the economics of installing and maintaining a water efficient landscape.

Landscape Irrigation Auditor shall mean a person who has been certified by The Irrigation Association to conduct a landscape irrigation audit or as otherwise approved by the Department of Public Utilities.

Landscape Plan Documentation Package shall mean the preparation of graphic and written criteria, specifications, and detailed plans to arrange and modify the effects of natural features such as plantings, ground and water forms, circulation, walks and other features to comply with the provisions of this ordinance. The Landscape Plan Documentation Package shall include a project data sheet, a Planting Plan, an Irrigation Plan, a Grading Plan, a Soils Report, a Landscape Water Allowance, and an Irrigation Schedule.

Landscape Water Allowance shall mean for design purposes, the upper limit of annual applied water for the established landscaped area. It is based upon the local Reference Evapotranspiration Rate, the ET adjustment factor and the size of the landscaped area.

Landscaped Zone shall mean a portion of the landscaped area having plants with similar water needs, areas with similar microclimate (i.e., slope, exposure, wind, etc.) and soil conditions, and areas that will be similarly irrigated. A landscape zone can be served by one irrigation valve, or a set of valves with the same schedule.

Landscaping shall mean any combination of living plants, such as trees, shrubs, vines, ground covers, flowers, turf or ornamental grass; natural features such as rock, stone, or bark chips; and structural features, including but not limited to fountains, reflecting pools, outdoor art work, screen walls, fences or benches.

Mulch shall mean any material such as bark, wood chips, rocks/stones or other similar materials left loose and applied to the soil.

Non-Drought Tolerant Plant shall mean a plant that will require regular irrigation for adequate appearance, growth and disease resistance.

Planting Plan shall mean a plan which clearly and accurately identifies and locates new and existing trees, shrubs, ground covers, turf areas, driveways, sidewalks, hardscape features, and fences.

Precipitation Rate shall mean the rate at which water is applied per unit of time, usually measured in inches per hour.

Rain Shut-Off Device shall mean a device wired to an automatic controller that shuts off the irrigation system when it rains.

Reconstructed Landscaping shall mean any existing approved landscaping and irrigation that is removed and replaced as part of new construction.

Reference Evapotranspiration Rate or ET_o shall mean a standard measurement of environmental parameters which affect the water use of plants. ET_o is expressed in inches per day, month or year and is an estimate of the evapotranspiration of a large field of four to five inch tall, cool season grass that is well watered. The average growing season ET_o for the Sandy City area is 31.18 inches. See also Evapotranspiration.

Runoff shall mean irrigation water that is not absorbed by the soil or landscape area to which it is applied and which flows onto other areas.

Soils Report shall mean a report by a soils laboratory indicating soil type(s), soil depth, uniformity, composition, bulk density, infiltration rates, and pH for the top soil and subsoil for a given site. The soils report also includes recommendations for soil amendments.

Spray Sprinkler shall mean an irrigation head that sprays water through a nozzle.

Stream Sprinkler shall mean an irrigation head that projects water through a gear rotor in single or multiple streams.

Turf shall mean a surface layer of earth containing mowed grass with its roots.

Waste of Water shall mean and include, but not be limited to:

1. The use of water for any purpose, including landscape irrigation, which consumes or for which is applied substantial amounts of excess water beyond the reasonable amount required by the use, whether such excess water remains on the site, evaporates, percolates underground, goes into the sewer system, or is allowed to run into the gutter or street. Every water consumer is deemed to have under his control at all times the water lines and facilities, other than water utility facilities, through which water is being supplied and used to his premises, and to know the manner and extent of his water use and excess runoff.
2. The excessive use, loss or escape of water through breaks, leaks or malfunctions in the water user's plumbing for any period of time after such escape of water should reasonably have been discovered and corrected. It shall be presumed that a period of 48 hours after the water user discovers such

break, leak or malfunction or receives notice from the City of such condition, whichever occurs first, is a reasonable time to correct such condition.

3. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas except to alleviate immediate fire, health or safety hazards.

Water Use Efficiency Review shall mean an on-site survey and measurement of irrigation equipment and management efficiency, and the generation of recommendations to improve efficiency.

Water Check (see Irrigation Audit)

Water Conserving Plant shall mean a plant that can generally survive with available rainfall once established although supplemental irrigation may be needed or desirable during the growing season.

C. Commercial, Industrial & Multi-Family Development

1. Applicability. The provisions of this section shall apply to landscaping for all new and reconstructed landscaping for public agency projects, private commercial and industrial projects, developer-installed landscaping in multi-family residential projects, and developer-installed landscaping in single family projects that require project review and approval by the City. Such review includes site plan review, modified conditional use permit review, and building permits issued for exterior modifications to commercial and multi-family buildings.

This section does not apply to:

- Homeowner provided landscaping at single family projects
- Registered Historical Sites

2. Documentation to be Submitted for Plan Approval. Landscape Plan Documentation Package shall be submitted to and approved by the Sandy City Public Utilities Department prior to the issuance of any permit. A copy of the approved Landscape Plan Documentation Package shall be provided to the property owner or site manager and to the local retail water purveyor. The Landscape Plan Documentation Package shall be prepared by a registered Landscape Architect or a Landscape Designer. The Irrigation Plan shall be prepared by an Irrigation Designer or a Landscape Architect. The Landscape Plan Documentation Package shall consist of the following items:

- a. **Project Data Sheet**. The Project Data Sheet shall contain the following:

- I. Project name and address;
- II. Applicant or applicant's agent name, address, phone and fax number;
- III. Landscape Designer/Landscape Architect's name, address, phone and fax number; and
- IV. Landscape contractor's name, address, phone and fax number.

- b. **Planting Plan**. A detailed Planting Plan shall be drawn at a scale that clearly identifies the following:

- I. Location of all plant materials, a legend with botanical and common names, and size of plant

materials;

- II. Property lines and street names;
 - III. Existing and proposed buildings, walls, fences, light poles, utilities, paved areas and other site improvements;
 - IV. Existing trees and plant materials to be removed or retained; and
 - V. Designation of Landscape Zones
- c. **Irrigation Plan.** A detailed Irrigation Plan shall be drawn at the same scale as the planting plan and shall contain the following information:
- I. Layout of the irrigation system and a legend summarizing the type and size of all components of the system, including manufacturer name and model numbers;
 - II. Static water pressure in pounds per square inch (psi) at the point of connection to the public water supply; and
 - III. Flow rate in gallons per minute and design operating pressure in psi for each valve and precipitation rate in inches per hour for each valve with sprinklers.
- d. **Grading Plan.** A Grading Plan shall be drawn at the same scale as the Planting Plan and shall contain the following information:
- I. Property lines and street names, existing and proposed buildings, walls, fences, utilities, paved areas and other site improvements; and
 - II. Existing and finished contour lines and spot elevations as necessary for the proposed site improvements.
- e. **Soils Report.** A Soils Report will be required where irrigated landscaped areas consisting of grass or similar turf exceed 33% of the overall landscaped area. The Soils Report shall describe the depth, composition, and bulk density of the top soil and subsoil at the site, and shall include recommendations for soil amendments. The Planting Plan shall incorporate the recommendations of the Soils Report into the planting specifications.
- f. **Landscape Water Allowance.** The annual Landscape Water Allowance shall be calculated using the following equation:

$$\text{Landscape Water Allowance} = ET_o \times 1.0 \times 0.62 \times A$$

Where Landscape Water Allowance is in gallons per growing season

- ET_o = Reference Evapotranspiration in inches per growing season
- 1.0 = ET_o adjustment factor, 100% of turf grass ET_o (growing season adjustment factor)
- 0.62 = conversion factor
- A = total Irrigated Landscape Area in square feet

- g. **Irrigation Schedule.** A monthly Irrigation Schedule shall be prepared that covers the initial 90-

day plant establishment period and the typical long-term use period. This schedule shall consist of a table with the following information for each valve:

- I. Plant type (for example, turf, trees, low water use plants);
- II. Irrigation type (for example, sprinklers, drip, bubblers);
- III. Flow rate in gallons per minute;
- IV. Precipitation rate in inches per hour (sprinklers only);
- V. Run times in minutes per day;
- VI. Number of water days per week; and
- VII. Cycle time to avoid runoff.

3. Landscape Design Standards.

- a. **Plant Selection.** Plants selected for landscape zones shall consist of plants that are well-suited to the microclimate and soil conditions at the project site. Plants with similar water needs shall be grouped together in landscape zones as much as possible.

For projects located at the interface between urban areas and natural open space (non-irrigated), Extra-Drought Tolerant Plants shall be selected that will blend with the native vegetation and are fire resistant or fire retardant. Plants with low fuel volume or high moisture content shall be emphasized. Plants that tend to accumulate excessive amounts of dead wood or debris shall be avoided.

Areas with slopes greater than 30% shall be landscaped with deep-rooting, Water Conserving Plants for erosion control and soil stabilization. Irrigation devices are limited to drip emitters, bubblers or sprinklers with a maximum precipitation rate not to exceed 0.85 inches per hour.

Park strips and other landscaped areas less than eight [8] feet wide shall be landscaped with Water Conserving Plants and/or grass.

- b. **Mulch.** After completion of all planting, all irrigated non-turf areas shall be covered with a minimum layer of four [4] inches of Mulch to retain water, inhibit weed growth, and moderate soil temperature. Non-porous material shall not be placed under the mulch.
- c. **Soil Preparation.** Soil preparation shall be suitable to provide healthy growing conditions for the plants and to encourage water infiltration and penetration. Soil preparation shall include scarifying the soil to a minimum depth of six [6] inches and amending the soil with organic material as per specific recommendations of the Landscape Designer/Landscape Architect based on the Soils Report.

4. Irrigation Design Standards

- a. Irrigation design standards for this ordinance shall be as outlined in the latest version of the "Minimum Standards for Efficient Landscape Irrigation System Design and Installation" as specified in the Sandy City Standard Specifications and Details for Municipal Construction. In

addition, the following portions of this section shall also be applicable.

- b. Landscape Water Meter. A water meter and backflow prevention assembly for landscaping that are in compliance with state code shall be installed after the City meter and outside the City maintained meter box on the customer's service line. The size of the meter shall be determined based on irrigation demand.
 - c. Pressure Regulation. A pressure regulating valve shall be installed and maintained by the consumer if the static service pressure exceeds 80 pounds per square inch (psi). The pressure-regulating valve shall be located between the landscape water meter and the first point of water use, or first point of division in the pipe, and shall be set at the manufacturer's recommended pressure for sprinklers.
 - d. Automatic Controller. All irrigation systems shall include an electric automatic controller with multiple program and multiple repeat cycle capabilities and a flexible calendar program. All controllers shall be equipped with an automatic Rain Shut-off Device.
 - e. On slopes exceeding 30%, the irrigation system shall consist of Drip Emitters, Bubblers, or sprinklers with a maximum Precipitation Rate of 0.85 inches per hour and adjusted sprinkler cycle to eliminate Runoff.
 - f. Each valve shall irrigate a landscape zone with similar site, slope and soil conditions and plant materials with similar watering needs. Turf and non-turf areas shall be irrigated on separate valve(s).
 - g. Drip Emitters or a Bubbler shall be provided for each tree where practicable. Bubblers shall not exceed 1.5 gallons per minute per device. Bubblers for trees shall be placed on a separate valve unless specifically exempted by the Sandy City Public Utilities Department due to the limited number of trees on the project site.
 - h. Sprinklers shall have matched Precipitation Rates with each control valve circuit.
 - i. Check valves shall be required where elevation differences will cause low-head drainage. Pressure compensating valves and sprinklers shall be required where a significant variation in water pressure will occur within the irrigation system due to elevation differences.
 - j. Drip Irrigation lines shall be placed underground or otherwise permanently covered, except for Drip Emitters and where approved as a temporary installation. Filters and end flush valves shall be provided as necessary.
 - k. Irrigation zones with overhead spray or stream sprinklers shall be designed to operate between 6:00 p.m. and 10:00 a.m. to reduce water loss from wind and evaporation. Drip or bubbler zones are excluded.
 - l. Program valves for multiple repeat cycles where necessary to reduce runoff, particularly slopes and soils with slow infiltration rates.
5. Plan Review, Construction Inspection and Post-Construction Monitoring.
- a. As part of the Site Plan Approval and Building Permit Process, a copy of the Landscape Plan Documentation Package shall be submitted to the City for review and approval before

construction begins. With the Landscape Plan Documentation Package, a copy of the Landscape Water Allowance Worksheet shall be completed by a Landscape Designer and submitted to the City.

- a. All Landscape Plan Documentation Packages submitted must be certified by a licensed Landscape Architect or approved Landscape Designer. The Irrigation Plan must be prepared by an approved Irrigation Designer or a Landscape Architect.
- b. All landscape irrigation systems shall be installed by an Irrigation Contractor. The person representing the contracting firm shall be a full-time employee of the firm and shall be directly involved with the project including at least weekly site visits during construction.
- c. All installers, designers, and auditors shall meet state and local license, insurance and bonding requirements, and be able to show proof of such upon demand.
- d. During construction, site inspection of the landscaping may be performed by the City.
- e. Following construction and prior to the release of the secondary bond guarantee posted for the project, an inspection shall be scheduled with the Public Utilities Department to verify compliance with the approved landscape and irrigation plans. A Certificate of Substantial Completion as defined in the Sandy City Standard Specifications and Details of Municipal Construction manual shall be completed by the property owner, contractor or Landscape Designer/Landscape Architect and submitted to the City.
- f. Following construction and prior to release of the secondary bond guarantee posted for the project, a Water Use Efficiency Review will be conducted by a Landscape Irrigation Auditor. The auditor shall be independent of the contractor, design firm, and owner/developer of the project. The water performance audit will verify that the irrigation system complies with the minimum standards required by this ordinance. The minimum efficiency required for the irrigation system is 60% for distribution efficiency for all fixed spray systems and 70% distribution efficiency for all rotor systems. The auditor shall furnish a certificate to the City, designer, installer and owner/developer certifying compliance with the minimum distribution requirements, and an irrigation schedule. Compliance with this provision is required before the City will release the bond for the project.

D. Residential (Single Family) Development

1. The provisions of this section apply to landscaping for all new and reconstructed landscaping for single family residential dwellings. This section does not apply to:
 - Residential developments with developer installed landscapes; or
 - Registered historical sites.
2. Provisions for New or Reconstructed Landscapes.
 - a. Landscape Education Package. A copy of a Landscape Education Package shall be given to all new single-family homeowners by the City at the time of application for a building permit and all new or modified water account owners. The Landscape Education Package, prepared by the Public Utilities Department, shall consist of the following items:

1. Principals of water efficient landscape design
 2. Listing of Water-Conserving Plants
 3. Listing of certified Landscape Designers, certified Irrigation System Designers and suppliers, and certified Landscape Irrigation Contractors.
 4. Information Packet about the various area Demonstration Gardens.
 5. Information Packet about the City's water rate schedule, billing format for water use, and the economics of installing and maintaining a water efficient landscape.
- b. Post Installation. After the landscaping has been installed, the homeowner shall notify the Department of Public Utilities of its completion and request a listing of Landscape Auditors who can perform a Water Use Efficiency Review, also called a Water Check. The Water Check will determine the irrigation system efficiency, make recommendations for improvements, and provide the homeowner with an irrigation schedule.
3. Park strips and other landscaped areas less than eight [8] feet wide shall be landscaped with Water Conserving Plants and/or grass.

E. Prohibited Watering Practices

1. Waste of Water. Regardless of the age of a development (commercial, industrial, office or residential), water shall be properly used. Waste of Water is prohibited.
2. Restricted Watering Time. Watering time is restricted as specified in Title 14, Chapter 2 of the Revised Ordinances of Sandy City.

F. Enforcement, Penalty for Violations

1. Enforcement Authority. The Sandy City Public Utilities Director and other employees of the Public Utilities Department are authorized to enforce all provisions of this Chapter.
2. Violation of this Chapter. Any consumer who violates any provisions of this Chapter shall be issued a written notice of violation. The written notice shall be affixed to the property where the violation occurred and mailed to the consumer of record and to any other person known to the City who is responsible for the violation and its corrections. Such notice shall describe the violation and order that it be corrected, cured or abated immediately or within such specified time as the City determines is reasonable under the circumstances. Failure to receive such notice shall not invalidate further actions by the City. If the order is not complied with, the City may terminate water service to the customer and/or issue a class "C" misdemeanor citation.